

Assessing the effectiveness of cultural safety education reform for Indigenous health: Construct and criterion validity of the Wathaara scale



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Abstract

This study evaluated the Wathaara scale, which is a 28-item instrument developed to measure the outcomes of cultural safety education in Indigenous health¹. Results from an online survey of undergraduate health practitioner students, completed prior to their clinical placements, validated a strong factor structure across three core domains: Racism, History and Attitudes. The scale demonstrated strong construct and criterion validity, good overall reliability and good reliability for two factors; however, the third factor was not reliable in isolation, demonstrating its effectiveness as a tool for evaluating initiatives in cultural safety education. By fostering culturally safe graduates, the scale contributes to improving the safety of Indigenous healthcare professionals, students and patients. The Wathaara scale fills a critical gap in methodologies for evaluating cultural safety education and, with appropriate consultation, can be adapted for use in other Indigenous contexts.

Keywords: Indigenous population; Reliability and validity; Racism; Health education; Cultural safety
Clinical skill

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¹The term Aboriginal and Torres Strait Islander peoples is used to refer to the Indigenous peoples in Australia. Where the term Indigenous is used, it refers collectively to Indigenous peoples internationally.





Highlights

- There is a methodological gap for health professional educators assessing cultural safety education innovations for Aboriginal health equity and patient safety.
- The Wathaara scale was developed to address this gap.
- The scale demonstrates validity (construct, content) and is reliable.
- Positive attitudes towards Aboriginal and Torres Strait Islander peoples, and less racist sentiments, were associated with awareness of and commitment to culturally safe practice.

Introduction

As a social determinant of health ([Paradies et al. 2015](#); [Sherwood and Mohamed 2020](#)), addressing racism in healthcare is critical for producing better health outcomes for Indigenous peoples and there is a clear need to develop a culturally safe health workforce¹.

While there have been many innovations to address this, there is little in the way of measurement or evidence-based quantitative evaluation of these innovations. The Wathaara scale was developed to fill this gap.

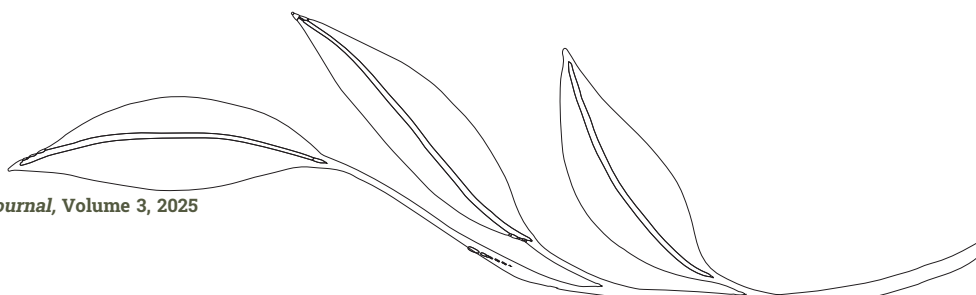
Wathaara is a Kalkadunga word meaning to ‘emerge from’. In this context, *Wathaara* refers to an emerging agenda in cultural safety education reform. The scale was developed to assess the effectiveness of cultural safety education reform and uses an iterative cultural validation process to evaluate the effectiveness and usefulness of a related scale designed to measure cultural capability. Indigenist research principles of political integrity, the emancipatory imperative, and privileging of Indigenous voices guided the development, piloting, refinement and psychometric testing of the Wathaara scale ([Rigney 2006](#)). This paper describes the results of further validation of the Wathaara scale, specifically construct and criterion

validity, and aims to contribute to methodological reforms in cultural safety education by monitoring the effectiveness of cultural safety education reform.

Background

Indigenous peoples in Australia and internationally experience racial discrimination and difficulty accessing health services ([Rigney 2006](#)). As a result of a shared history of colonisation, Indigenous peoples in Australia, Canada, New Zealand and the United States experience ongoing disparities in health and wellbeing ([Paradies et al. 2015](#)).

Cultural safety emerged in Aotearoa in response to Māori healthcare workers highlighting inequities in health outcomes between Māori and Pākehā. The first model of cultural safety was developed by [Ramsden \(2002\)](#), whereby health professional students progress from cultural awareness (understanding there are different cultures), to cultural sensitivity (critical self-reflection on own culture and how this impacts others), to cultural safety (culturally safe practice as defined by recipients of healthcare [[Best 2014](#)]). Cultural safety education reform demands that healthcare professionals, health services and broader health systems examine how their own culture impacts on patient-provider interactions and service





delivery, while acknowledging the inherent power imbalances between the patient and health professional (Elvidge et al. 2020).

In 1989, First Nations leaders called for the mandatory inclusion of Aboriginal and Torres Strait Islander health, history and culture in undergraduate health professional education in Australia, via the National Aboriginal and Torres Strait Islander Health Strategy (NAHSWR 1989). The National Aboriginal and Torres Strait Islander Health Curriculum Framework (NATSIHCF) was later developed to support the implementation of this recommendation in higher education health curricula. Despite decades of investment in curriculum reform, the impact of these efforts has yet to be fully measured or assessed.

In Australia, the Health Practitioners Act establishes legislative requirements designed to ensure patient safety. The Australian Health Practitioner Regulatory Authority (Ahpra) has implemented the National Scheme's Aboriginal and Torres Strait Islander Health and Cultural Safety Strategy 2020–25 to make patient safety for Aboriginal and Torres Strait Islander peoples a standard practice and recognises the link between clinical and cultural safety. This strategy seeks to produce consistency and quality improvement across the National Registration and Accreditation Scheme. It sets a clear direction and course of action for Ahpra, national boards and accreditation authorities, who collectively regulate Australia's 740,000 registered health practitioners. Additionally, the strategy addresses workforce development needs for Aboriginal and Torres Strait Islander peoples across the health professions. In October 2022, legislative amendments to the Health Practitioner Regulation National Law enshrined cultural safety as a guiding principle and objective for the National Scheme (Ahpra 2020).

The National Aboriginal and Torres Strait Islander Health Plan 2021–31 commits to embedding cultural safety across the whole health system (Department of Health [DoH] 2021). The National Safety and Quality Health Service Standards include actions to meet the specific needs of Aboriginal and Torres Strait Islander peoples (Australian Commission on Safety and Quality in Health Care 2017). The Australian Health Practitioner Regulation Authority's national scheme's Aboriginal and Torres Strait Islander Health and Cultural Safety Strategy 2020–25 aims for patient safety for Aboriginal and Torres Strait Islander peoples to be the norm through recognition of the inextricable link between clinical and cultural safety (Ahpra 2020).

Recognising the inextricable link between clinical and cultural safety is a significant step towards ensuring patient safety for Aboriginal and Torres Strait Islander peoples in Australia (Ahpra 2020), and Indigenous peoples globally. However, there is significant variance in how Indigenous health and cultural safety are integrated into undergraduate health education programs, and how quality in teaching and learning is assessed in this context (West et al. 2017).

Addressing a methodological gap measuring the impact of cultural safety educational reform

Cultural safety education in health professional education is rapidly evolving. Traditional learning theory, where students learn content from its most basic (recall) through to most complex (creation of new ideas), is not congruent with cultural safety education. Educators are therefore encouraged to use transformative learning theory to facilitate both emotional and intellectual development across sensitive content (Jackson et al. 2013). Transformative learning theory explains a process of moving from students' problematic fixed assumptions to becoming





‘more inclusive, discriminating, open, reflective and emotionally able to change’, which underlies clinical practice change (Mezirow 2003). An integrative review of non-Indigenous health professional students undertaking cultural safety education identified four features (Mills et al. 2018):

- 1) increased knowledge of Indigenous history and culture
- 2) emotional responses to content (e.g. guilt, shame or anger)
- 3) difference in perceived value of the content (e.g. dismissive of value, or feeling increased confidence)
- 4) cultural competence and critical thinking (e.g. reflexivity aided learning of how values and beliefs impact practice).

A 2018 literature review – including 40 articles on cultural safety education from Australia, Canada, New Zealand and the United States – found that most educational innovations did not include Indigenous educators in design or delivery of cultural safety education; while many evaluation methods were used, most were not rigorous (Paradies et al. 2015). There are few reliable and valid scales available to measure effective learning in cultural safety education innovations (Mills et al. 2018), with most using either standardised university course surveys or non-validated Likert scale questions to assess course quality (Paradies et al. 2015).

The origins of the Wathaara scale and associated research studies lie in the development and validation of the Cultural Capability Measurement Scale (CCMT). The CCMT was created to assess cultural capability and the impact of Aboriginal and Torres Strait Islander health education and training innovations against the five domains outlined in the NATSIHCF: Respect;

Communication; Safety and quality; Reflection; and Advocacy (West et al. 2018). Since its development, the CCMT has undergone three reviews, and has since been enhanced to include and assess cultural safety using an Indigenous research approach. The enhanced CCMT scale has been renamed Wathaara, with analyses revealing three factors: Eliminating racism in practice; History and power; and Attitudes, values and beliefs. The Wathaara scale has been used in a diverse range of health education and training contexts and is framed by Ahpra’s definition of cultural safety (West et al. 2021). The results of this research project provide evidence for the construct and criterion validity of the Wathaara scale.

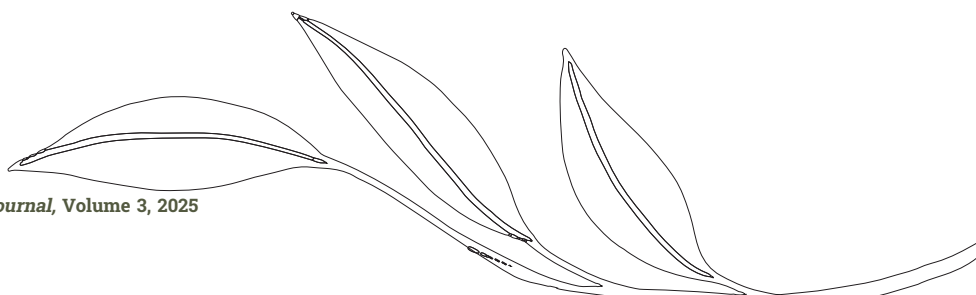
The study

While the vision that the authors hold for their work – a culturally safe and equitable healthcare system free of racism – aligns with that of the National Aboriginal and Torres Strait Islander Health Plan 2021–31 (DoH 2021), the aim of this research project was to gather construct and criterion validity evidence for the Wathaara scale by using validated instruments measuring related constructs to assess the effectiveness of cultural safety education innovations for Indigenous health.

Methods

Design

Data were collected as part of an online cross-sectional study utilising planned missingness. Planned missingness is a survey design approach that reduces participant burden while ensuring adequate coverage of items for analysis (Graham et al. 2006). Questionnaires were broken into blocks, with core blocks presented to all respondents, and the remaining blocks randomly allocated. Aboriginal and Torres Strait Islander participants relate to and respond to both test and validity items in a





qualitatively and quantitatively different manner than non-Indigenous participants and, as such, their responses were analysed and presented separately.

Study setting and sampling

Participants were students enrolled in an undergraduate health professional program in an Australian university setting. Participants were recruited prior to undertaking a mandated self-paced, online, 5-hour training innovation prior to clinical placement. Immediately before accessing course content, students received an invitation to complete the voluntary survey, with information about the purpose and length of the survey, how data were stored and protected, and contact details for the lead investigator. If potential participants agreed to the survey, they indicated consent and were provided a link to complete a pre-test survey on Limesurvey (www.limesurvey.org) prior to undertaking cultural safety education. A sample size of 800 was set to allow 10 respondents for every item to be validated, as well as to collect enough responses for validation scales to conduct correlation analyses with a large effect size, with power set at 0.8.

Inclusion and exclusion criteria

Only students enrolled in a health professional program at an Australian university were able to participate. Any participants outside this criterion were excluded.

Instrument

The instrument consisted of a questionnaire with five block sections, using a planned missingness design. The five blocks consisted of: 1) initial items to determine if participants were eligible for the study; 2) the 28 test items (Wathaara scale); 3) Indigenous-only items, not analysed in this paper; 4) four validation scales; and 5) demographics. All participants received

blocks 1, 2, 3, and 5 in full; however, each of the four scales in block 4 were presented such that participants would be randomly assigned one of the four validation scales. Additionally, to minimise order effects, the order of blocks 2 and 4 were randomised, as was the order of items within scales. Demographics included: Aboriginality, health discipline, domestic or international enrolment, rurality, age, sex, self-selected description of identity (detailed above), primary residential location, educational attainment and employment status.

Test scale – Wathaara

The Wathaara scale was developed as part of a mixed-method approach to measuring the impact and efficacy of cultural safety education in Indigenous health in higher education (West et al. 2017; 2018; 2021). The Wathaara scale is a 28-item scale that was designed to assess cultural safety in health professionals and health professional students. The scale is reliable ($\alpha = .87$) and consists of three factors: 1) *Commitment to Culturally Safe Practice* (12 items, e.g. 'To improve First Peoples health, First Peoples cultures need to be visible in education and practice settings', $\alpha = .89$); 2) *Understanding of History and Power* (nine items, e.g. 'Power dynamics impact on me as a health professional caring for Aboriginal and Torres Strait Islander peoples', $\alpha = .86$); and 3) *Attitudes, Values and Beliefs* (seven items, e.g. 'There may be few exceptions, but in general First Peoples are all the same', $\alpha = .52$). Items are presented with a Likert-type response scale of 1 to 5, strongly disagree–strongly agree, with higher total mean scores indicating a greater impact of cultural safety education.

Construct validity scales

Two scales were included to test construct validity of the Wathaara scale. Additionally, a scale assessing





socially desirable responding was included to assess response bias.

Symbolic Racism Extended Scale (SRES; Wheeler 2001). The SRES is a 13-item scale designed to measure contemporary, less overt or obvious racist sentiments among the general Australian population (e.g. ‘New migrants to Australia receive benefits which other Australians have to work for’; $\alpha = .89$; $\alpha_{\text{current}} = .90$). Items are answered on a 7-point Likert response scale, 1 to 7, strongly disagree–strongly agree, with higher mean scores indicative of more racist attitudes.

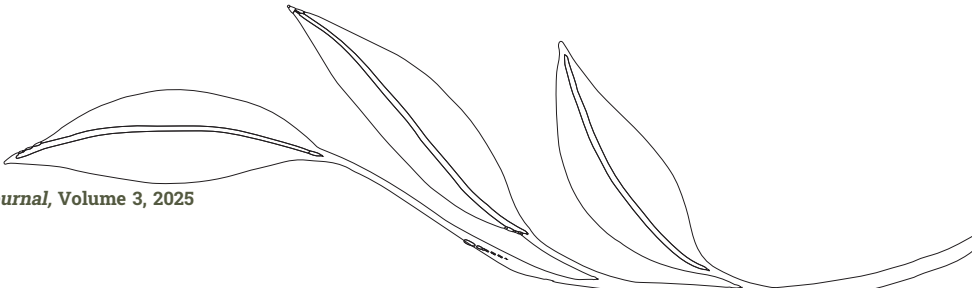
Attitudes toward Indigenous Australians scale (ATIA; Pedersen 2004). The ATIA scale is a 19-item scale designed to assess public attitudes toward First Peoples (e.g. ‘Aboriginal and Torres Strait Islander peoples are given more government money than they should’). The scale is reliable ($\alpha = .91$; $\alpha_{\text{current}} = .93$), with items presented on a Likert-type response scale of 1 to 7, strongly disagree–strongly agree, with higher total mean scores indicating a more negative attitude.

Balanced Inventory of Desirable Responding Short Form (BIDR16; Hart et al. 2015). The BIDR16 is a 16-item scale intended for use as an alternative to the 40-item Balanced Inventory of Desirable Responding, while maintaining validity, reliability and structure. The scale contains two subscales comprising six items each: self-deception (e.g. ‘I have sometimes doubted my ability as a lover’; $\alpha = .66$, $\alpha_{\text{current}} = .56$) and impression management (e.g. ‘I never take things that don’t belong to me’; $\alpha = .72$, $\alpha_{\text{current}} = .71$). Participants respond on a 7-point Likert-type scale from ‘not true at all’ to ‘very true’, with continuous scoring used such that total scores are calculated by summing across responses, with possible scores ranging 8 to 56 for the subscales and 16 to 112 for the total.

Australian Reconciliation Barometer (ARB) criterion validity scale (Reconciliation Australia 2020)

A subscale from a national survey was used to test criterion validity. The ARB is a nationwide survey conducted every two years, designed to measure Australians’ attitudes toward reconciliation along five domains: race relations, equality and equity, unity, institutional integrity, and historical acceptance. Historical acceptance means that respondents ‘understand and accept the wrongs of the past and the impact of these wrongs’. To test criterion validity of the Wathaara scale, the six history items from the ARB were presented as statements, with the question text asking participants if they accept the statements as factual (see Box 1). Responses on the ARB are coded as 1 = not factual, 2 = not sure or 3 = factual.

Box 1. Historical acceptance statements	
Statements	Responses
Government policy enabled Aboriginal children to be removed from their families without permission until the 1970s	Not factual Not sure Factual
Aboriginal and Torres Strait Islander people did not have full voting rights throughout Australia until the 1960s	Not factual Not sure Factual
Aboriginal and Torres Strait Islander Australians were subject to mass killings, incarceration, forced removal from land and restricted movement throughout the 1800s	Not factual Not sure Factual
Government policy in the 1900s dictated where Aboriginal and Torres Strait Islander Australians could live and be employed	Not factual Not sure Factual
At the time of British colonisation, there were at least 250 distinct Indigenous Nations, each with their own cultural identities and custodial connections to land	Not factual Not sure Factual
Frontier wars occurred across the Australian continent as a result of Aboriginal and Torres Strait Islander people defending their traditional lands from European invasion	Not factual Not sure Factual



Data collection/analysis

This paper reports results from non-Indigenous participants only. Data were collected from November 2020 to March 2021. To test for a stable factor structure, an exploratory factor analysis (EFA) was conducted utilising the 28 test items. The second set of analyses comprised bivariate correlations between test scale scores and scores on validity scales, with significance set at $P < .05$. All analyses were run in SPSS 27 (IBM Corp., Armonk, NY, USA). The ARB historical items were dichotomously coded for analysis: factual (correct) and unsure/not factual (incorrect). Therefore, a higher total score on this scale indicated greater acceptance of Australia's colonial history. All other validity scales were analysed as designed.

Ethical considerations

The development, piloting, refinement and psychometric testing of the Wathaara scale was, and continues to be, led and controlled by First Peoples, demonstrating recognition and respect for First Peoples' ways of knowing, being and doing (West et al. 2017; 2018; 2021). The current work was conceived, designed and conducted in accordance with Rigney's Indigenist Research Principles of political integrity, the emancipatory imperative and privileging of Indigenous voices (Rigney 2006). Additionally, the research follows the guidelines for ethical research involving Aboriginal and Torres Strait Islander peoples set out by the National Health and Medical Research Council (NHMRC 2018). Human Research Ethics approval was obtained on 1 April 2020 from Griffith University's Human Research Ethics Committee (ref no: 2020/236).

Results

Characteristics of the sample

Participant flow is reported in Figure 1. Of the 909 eligible Indigenous and non-Indigenous participants,

72% consented to participate. Of the non-Indigenous participants, 568 provided survey data.

Participant characteristics displayed in Tables 1 to 3 below. Most participants were female (82%) (Table 1); non-Indigenous Australian (51%), Asian (28%) or European (19%) (Table 2); studying nursing (32%), medicine (15%) or midwifery (4%) (Table 3).

The entire sample was utilised for the EFA; however, due to the planned missingness design, the samples for correlation analyses varied for each scale: for the ATIA, $n = 129$; for SRES, $n = 129$; for BIDR16, $n = 159$; and for the History items, $n = 141$. Power analyses indicated that 0.8 was achieved for medium effect sizes.

Factor analysis

Principle components analysis was used, with the number of factors set to three in order to examine the stability of the factor structure with the revised items. It was expected that factors would interrelate, so varimax rotation was allowed, with Kaiser normalization and five iterations. All items correlated with at least one other item, all communalities were $> .3$, sampling was adequate ($KMO = 0.94$), and Bartlett's test of sphericity indicated factor analysis as appropriate ($\chi^2 (378) = 6,305.72$, $P < .001$). A cut-off of 0.5 was used to determine which item loaded onto which factor. The three three-factor solution explained 48.59% of variance, with factor loadings and communalities displayed in Table 4.

Four items presented issues (Table 4). Item 2, previously loading onto Factor 2, fell just below the cut-off of 0.5 at 0.46, with cross-loading onto Factor 1 at 0.41. Similarly, item 10, which previously loaded onto Factor 1, fell at the cut-off for both Factors 1 (0.47) and 2 (0.45). Items 22 and 25, which previously

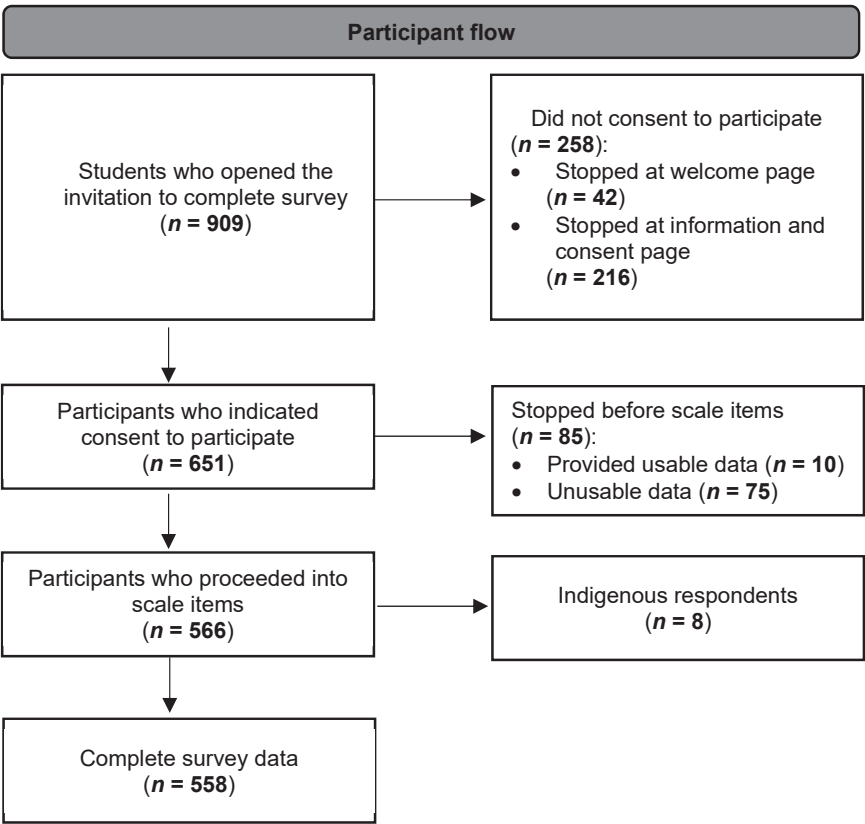


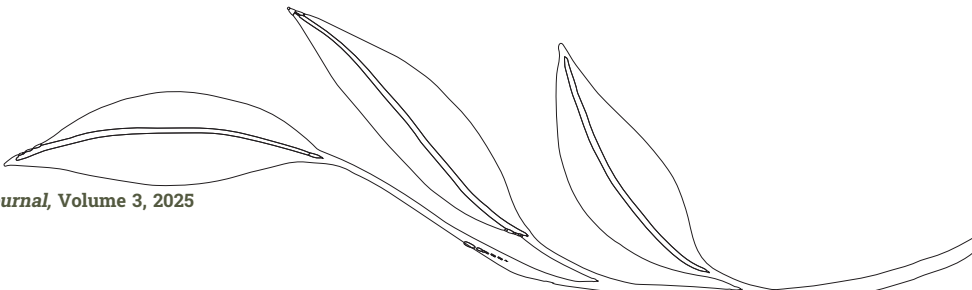
Figure 1: Participant flow.

loaded onto Factor 2, loaded in this analysis onto Factor 1 (0.54 and 0.52, respectively). It is not unexpected or surprising to find cross-loading, given the conceptual overlap between factors and the interrelated nature of the components of culturally safe practice. Due to the consistency and strength of these items' loadings in previous samples, the decision was made to retain the items under their original factors, flagging future refinements. In that light, item 7, the removal of which would raise the reliability of Factor 3 to 0.6, was also retained. The properties of the solution are presented in Table 5, and the interrelations between factors in Table 6.

Validity analyses

A chi-square goodness of fit test showed that there was equal assignment to validity scales ($\chi^2(3) = 3.4, P = .334$). Correlations between Wathaara total scores and validity scale scores are presented in Table 7, along with descriptives.

The medium-to-strong negative correlation between scores on the Wathaara scale and Attitudes toward Indigenous Australians (ATIA) indicated that where attitudes were more negative, the impact of cultural safety education was lower. Likewise, a strong negative correlation between the Symbolic Racism Extended Scale (SRES) scores and Wathaara indicated



Demographic		Frequency (%)
Age (<i>M</i> , <i>SD</i>)		24.83 (7.14)
Sex	Male	99 (16.8)
	Female	451 (82.0)
	Other	0 (0.0)
Main living location	Major city	313 (57.5)
	Inner regional	146 (26.8)
	Outer regional	62 (11.4)
	Remote	21 (3.9)
	Very remote	2 (0.4)
Student type	Domestic	432 (90.0)
	International	48 (10.0)
Education of health professional students	Less than high school	2 (0.4)
	High school equivalent	222 (44.5)
	Bachelors	222 (44.5)
	Masters	43 (8.6)
	PhD	10 (2.0)
Employment	Full-time	96 (18.5)
	Part-time	145 (28.0)
	Casual/sessional/seasonal	165 (31.9)
	Not employed	112 (21.6)

Table 1: Participant characteristics with percentages

that where impact of cultural safety education was low, endorsement of symbolically racist sentiments was higher.

Program	Frequency	Percentage
Nursing	149	32.0
Medicine	68	14.6
Midwifery	20	4.3
Counselling	17	3.6
Dental health sciences	14	3.0
Occupational therapy	13	2.8
Pharmacy	12	2.6
Education	9	1.9
Exercise sciences	9	1.9
Paramedicine	9	1.9
Human services	7	1.5
Health science	6	1.3
Nutrition and dietetics	5	1.1
Child and family studies	3	0.6
Health management	3	0.6
Medical laboratory science	3	0.6
Criminology	1	0.2

Table 2: Participant disciplines (*N* = 466)

Descriptor	Count	%
Australia, non-Indigenous	151	51.2
Europe	57	19.3
East Asia	50	16.9
Southeast Asia	18	6.1
South Asia	16	5.4
North America, non-Indigenous	13	4.4
New Zealand, non-Indigenous	7	2.4
West Asia	7	2.4
Africa	6	2.0
South America, non-Indigenous	6	2.0
Polynesia	2	0.7
Melanesia	1	0.3

Multiple participants entered multiple descriptors. Nonsensical or non-entries are not included in this Table. Only entries with *n* > 10 are included.

Table 3: Participant self-description (*N* = 295)

Item	Factor 1	Factor 2	Factor 3	Communality
1	0.24	0.71	0.13	0.58
2	0.41	0.46	0.02	0.38
3	0.71	0.20	0.07	0.54
4	0.24	-0.02	0.69	0.53
5	0.69	0.20	0.07	0.52
6	0.69	0.18	0.09	0.52
7	0.28	-0.12	-0.46	0.30
8	0.70	0.13	0.02	0.51
9	0.67	0.22	0.01	0.49
10	0.47	0.45	0.09	0.44
11	0.62	0.17	0.04	0.41
12	0.12	0.06	0.75	0.59
13	0.21	-0.01	0.50	0.30
14	0.17	0.11	0.75	0.60
15	0.75	0.13	0.15	0.60
16	0.75	0.24	0.06	0.63
17	0.03	0.18	0.61	0.40
18	0.74	0.17	0.01	0.57
19	0.70	0.15	0.08	0.53
20	0.77	0.02	-0.03	0.59
21	0.11	0.67	0.04	0.45
22	0.54	0.34	0.24	0.47
23	0.22	0.60	-0.04	0.41
24	0.32	-0.08	-0.46	0.32
25	0.52	0.28	0.21	0.39
26	0.15	0.63	0.05	0.42
27	0.39	0.52	0.26	0.49
28	0.07	0.75	0.22	0.62

Table 4: Factor loadings and communalities for three-factor solution (*N* = 560)



	Factor 1	Factor 2	Factor 3	Total
Number of items	12	9	7	28
Min	1	1	2	1.57
Max	5	5	5	4.97
Mean	4.40	3.71	3.46	3.94
Std. error	0.02	0.03	0.02	0.02
Median	4.42	3.78	3.43	3.96
SD	0.52	0.64	0.57	0.47
Std. skew	-17.90	-2.51	-1.18	-6.01
Cronbach's alpha	0.91	0.83	0.50	0.89
Rotated loading	7.12	3.54	2.95	-
Variance explained (%)	25.42	12.65	10.52	48.59
Average inter-item correlation	.66	.53	.36	.48

Table 5: Properties of three-factor solution (N = 560)

Neither the Balanced Inventory of Desirable Responding (BIDR16) total scores nor any of the subscales correlated with Wathaara total scores; however, this does not eliminate the possibility of socially desirable responding. Importantly, the scores for the subscales and total were in the upper half of the response range, and so participants may have engaged in socially desirable responding. Responses for individual history items are presented in [Table 8](#).

Greater knowledge of Australia’s colonial history was associated with greater impact of cultural safety education, with a medium effect size for the total number of items correct and small effect sizes for individual items. Interestingly, the number of incorrect answers tended to increase with each item, despite randomisation of item order, such that approximately

	Total	Factor 1	Factor 2	Factor 3
Total	-			
Factor 1	.87*	-		
Factor 2	.86*	.63*	-	
Factor 3	.65*	.38*	.38*	-

*P < .01.

Table 6: Intercorrelations of factors, exploratory factor analysis (N = 560)

Scale	1.	2.	3.	4.	5.	6.	7.	M (SD)
1. Wathaara	-							3.94 (0.47)
2. ATIA	-.57*	-						2.17 (0.80)
3. SRES-E	-.74*	-	-					2.41 (0.84)
4. SDE (BIDR16)	.01	-	-	-				3.89 (0.72)
5. IM (BIDR16)	.05	-	-	.38*	-			4.74 (0.89)
6. Total BIDR	.04	-	-	.79*	.87*	-		4.18 (0.81)
7. History	.45*	-	-	-	-	-	-	4.49 (1.96)

*P < .01.

Table 7: Correlations and descriptives for test and validity scales

one-fifth were incorrect at item 1 and one-third by item 6.

Discussion

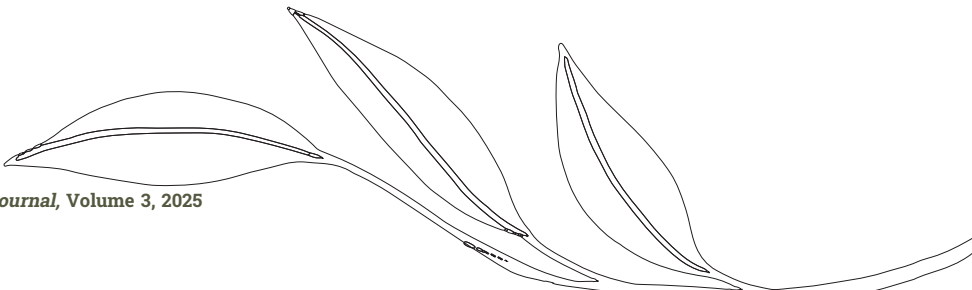
Summary

Overall, the findings in this paper provide strong evidence for both the stability of the Wathaara’s factor structure and the construct and criterion aspects of test validity. Negative correlation was found between scores on the Wathaara scale and scores on the Attitudes toward Indigenous Australians and Symbolic Racism Extended scales. These findings indicate that positive attitudes towards Aboriginal and Torres Strait Islander peoples, and less racist sentiments, were associated with awareness of, and commitment to, culturally safe practice. Furthermore, greater acceptance of Australia’s colonial history was positively correlated with Wathaara scale scores.

Item	Factual (%)	Unsure (%)	Not factual (%)	Correlation with Wathaara
1. Stolen Generation	111 (78.7)	19 (13.5)	11 (7.8)	.34*
2. Voting rights	107 (75.9)	22 (15.6)	12 (8.5)	.38*
3. Persecution	116 (80.1)	16 (11.3)	12 (8.5)	.41*
4. Restricted rights	99 (70.2)	35 (24.8)	7 (5.0)	.38*
5. Unique nations	108 (76.6)	29 (20.6)	4 (2.8)	.38*
6. Frontier wars	95 (67.4)	41 (29.1)	5 (3.5)	.28*

*P < .01.

Table 8: Responses to history acceptance items (N = 141)



Factor 1. Racism

Cultural safety is a euphemism for anti-racism, with the World Health Organization recognising it as a social determinant of health (Paradies et al. 2015; G Phillips, personal communication, February 2018). Racism is both implicit or explicit, occurring at individual, institutional and systemic levels (Elvidge et al. 2020), and impacts health outcomes (Maina et al. 2018).

Addressing racism and implicit bias through critical reflection is essential for developing culturally safe practices. Ongoing critical reflection is required and was introduced to address power imbalances inherent in care transactions to explore implicit biases and deconstruct stereotypes (Mkandawire-Valhmu et al. 2019). Reflection facilitates awareness of power imbalance biases, enabling practitioners to deliver equitable and culturally safe care. The Wathaara scale captures these elements by assessing commitment to anti-racism and cultural safety.

Factor 2. Understanding of history and power

Cultural safety education includes deconstruction of the coloniser's version of history and replacement with an accurate history of events and the impact of colonisation on the health and wellbeing of Indigenous peoples (Lokugamage et al. 2021; Papps and Ramsden 1996). Additionally, the critical self-reflection needed to effect cultural safety education requires examination of historical and social dynamics, alongside intergenerational and white privilege (Carey and Prince 2015; Elvidge et al. 2020; Lokugamage et al. 2021). This type of discussion about history can elicit defensive and uncomfortable responses from non-Indigenous participants in cultural safety education (Thackrah and Thompson 2013), who struggle with historical acceptance or 'historical literacy' (Cox and Best 2019).

Cultural safety requires health professionals to become critically aware of their own culture and cultural systems, rather than becoming 'competent' in other peoples' cultures (Curtis et al. 2019). According to Ramsden, cultural safety is 'about the analysis of power and not the customs or habits of anybody' (Best 2014). Therefore, critical examination of the health professional's self, in terms of power and privilege, is crucial to developing a culturally safe health workforce (Lokugamage et al. 2021). This includes the ability of nurses and midwives to view themselves within a sociohistorical context and acknowledge their privilege (Best 2014). Specifically, acknowledging white privilege means recognising the unearned privilege of not being constantly reduced to one's racial or ethnical identity, and treated as inferior (Cox and Best 2022). Furthermore, cultural safety learners are facilitated to recognise the impacts of colonisation, the resultant power inequalities, and how this impacts on health professionals' attitudes, values and beliefs about the health and wellbeing of Indigenous peoples (Mackean et al. 2020).

Factor 3. Attitudes, values and beliefs

This dimension underscores the difficulty of shifting healthcare attitudes from a focus on equality to one centred on equity. Although current reliability is limited, this factor sheds light on the biases and perceptions that shape provider behaviours. Refinement and further validation of this component in future studies will enhance its effectiveness in evaluating changes brought about by cultural safety education; however, at present, it is recommended to interpret findings with only this subscale with caution.

Strengths and limitations

There were strengths and limitations with the design and conduct of this study. Despite having <800



participants, analyses indicated that the study had sufficient power to detect medium effect sizes. More than two-thirds of eligible participants in a cultural safety education program agreed to participate, and the low attrition rate (13%) meant that most participants completed the survey. The high rate of completion, compared with previous testing of the Wathaara scale (West et al. 2021), may be attributed to the planned missingness design, which reduces participant fatigue. However, the self-report design of the survey, and the potentially challenging survey questions, may have led to some participants responding in socially desirable ways (i.e. what they think they should say, rather than what they believe). While neither BIDI6 subscale correlated with Wathaara scores, given the sensitive nature of the content, socially-desirable responding, to some extent, likely underlies the high mean for all scales.

Recommendations for further research

The Wathaara's third factor (Attitudes, values and beliefs), as in previous validations, was not reliable when isolated, and so will be the focus of further development and testing. Future work will also seek to establish predictive criterion validity, such that Wathaara scores can be shown to predict future participant performance. Future studies could also consider further scale validation by including measures of cultural safety from the Aboriginal and Torres Strait Islander patient perspective as one way of ascertaining whether the education programs impact service delivery and subsequent patient experience.

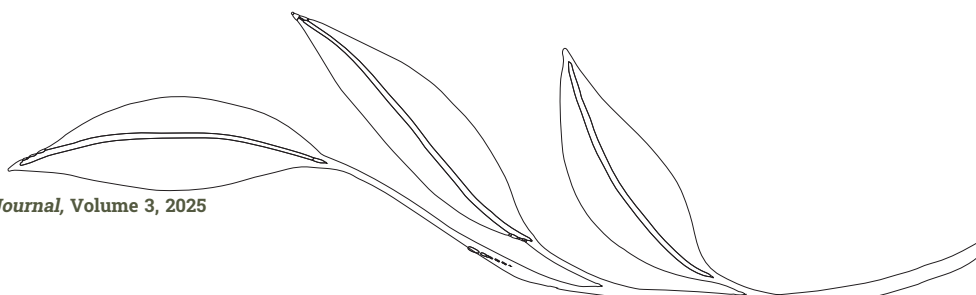
Implications for policy and practice

Racism in healthcare is pervasive and manifests in harmful patient-provider interactions (Sim et al. 2021). Evidence of subquality care includes poor patient-provider communication, misdiagnosis,

inappropriate treatment recommendations, poor pain management and increased risk of death (Maina et al. 2018). There is, however, a dearth of knowledge about effective methods and scales for addressing and mitigating racism in health professionals (Ricks et al. 2022).

Cultural safety educational reforms need to demonstrate how these efforts lead to the delivery of improvement in quality of care and health equity (Curtis et al. 2019). There is minimal research on the impact of culturally safe education on health outcomes for Indigenous peoples globally, and on indicators of culturally safe practice (Paradies et al. 2015). Despite decades of cultural safety education and training, the gap between Indigenous and non-Indigenous health outcomes has largely remained stagnant or worsened (Australian Medical Association 2018). However, the negative impact of institutional racism occurs regardless of the culturally safe practice of individual health professionals (Bourke et al. 2019). This may explain why there is scant evidence to verify the impact of cultural safety training alone on health disparities (Shepherd 2019).

Cultural safety education is one component of a multi-component approach that is needed to tackle racist healthcare systems. Furthermore, culturally safe practice can only be measured from the patients' perspective. Therefore, complex evaluation is required to determine whether, and how, cultural safety learning results in culturally safe practice as determined by recipients of patient care. This means that other measures are required, for example the Cultural Safety Survey is a reliable and valid scale to measure the experience of cultural safety from an Indigenous patient perspective, in terms of communication, trust, environment and support for Indigenous families and culture (Elvidge et al. 2020).





When practitioners commit to the culturally safe practice standards and to addressing the impact of racism, history and power on healthcare outcomes, they also commit to lifelong critical reflection on the attitudes, values and beliefs that underpin healthcare. This commitment is central to continuous quality improvement in healthcare. The Wathaara scale goes some way towards addressing the complexities of assessing impact in this context; however, it is not designed to be used as a standalone scale. It is part of a wider approach within healthcare reform to address negative attitudes and racist views towards Indigenous peoples across the world and address the impacts of colonisation and health practitioner beliefs, attitudes and values on their health and wellbeing. This applies whether the setting is Australia, New Zealand, Canada, the Americas or any other colonial context.

Conclusion

Cultural safety is a quality and safety standard in numerous regulatory and accreditation environments, yet there is a paucity of evidence to inform what makes cultural safety education in Indigenous healthcare effective. When tested, the results confirmed a stable factor structure across three factors (abbreviated to Racism, History and Attitudes), as well as construct and criterion validity. A mixed method approach to evaluation is recommended that includes quantitative health professional self-report (Wathaara scale) and a qualitative component that can explore health professional practice change. The Wathaara scale is not intended for use in isolation, rather as a scale for quality improvement in cultural safety educational reforms to address Indigenous health inequities. Importantly, this research contributes to a methodological gap for health professional educators assessing cultural safety education innovations for Indigenous health equity. While the scale was developed in the Australian

context, it serves as an example of Indigenous-led assessment of mainstream health education that has application, with the appropriate consultation, to other Indigenous populations globally.

Author contributions

Conceptualisation: R. West, V. Saunders, J. Armao. Data curation: J. Armao. Formal analysis: J. Armao. Funding acquisition: R. West. Investigation: R. West, V. Saunders, J. Armao. Methodology: J. Armao. Project administration: J. Armao, R. West. Resources: R. West. Software: J. Armao. Supervision: R. West, V. Saunders. Validation: R. West, V. Saunders, J. Armao. Visualisation: R. West, V. Saunders, J. Armao. Roles/writing – original draft: R. West, V. Saunders, J. Armao. Writing – review and editing: R. West, V. Saunders, J. Armao.

Data sharing

Data from this study are not currently available.

Declarations of interest

The authors declare no competing interests.

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Author biographies

Ms Jessica Armao is a non-Indigenous quantitative researcher living and working on Kombumerri land. She





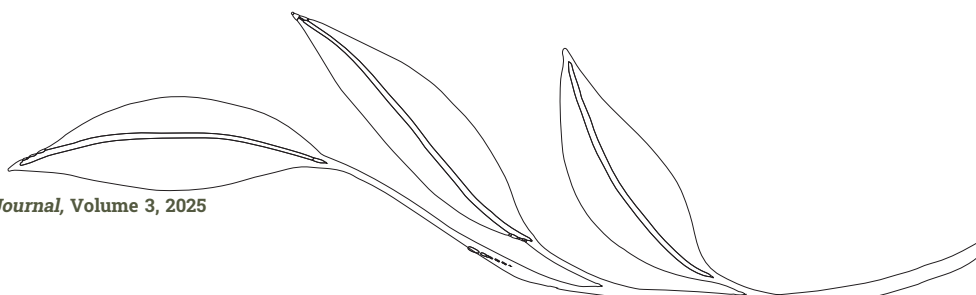
primarily focuses on scale development, especially for the purposes of evaluation of the effectiveness of cultural capability and cultural safety education for healthcare students and professionals. Ms Armao is of mixed Lebanese and Anglo-Australian heritage and is currently undertaking postgraduate studies in the Arts.

Dr Vicki Saunders, a proud Gunggari woman from the Maranoa region in Southern Central Queensland, has an extensive academic background, including a Bachelor of Psychology, a Master of Public Health and a PhD. As a Senior Research Fellow at Central Queensland University's Jawun Research Centre and the CRE-STRIDE program, she focuses on intersections of place, Country, sonic engagement and Indigenous health. Her work integrates poetics into arts-based, Indigenist and public health research. She serves as an Adjunct Research Associate with the Queensland Conservatorium Research Centre, contributing to the Listening to Country project, which amplifies Indigenous voices through sound and storytelling.

Professor Roianne West, a proud Kalkadunga and Djaku-nde woman from Queensland, comes from a long line of healers spanning four generations. With a career in Aboriginal health, nursing and midwifery spanning more than 25 years, she started as an Aboriginal health worker before making history as Australia's first Professor of Indigenous Health. She holds a Bachelor of Nursing from Deakin University, a Master of Mental Health Nursing from the University of Southern Queensland and a PhD from James Cook University, where she pioneered a national model to increase Indigenous nurses. She served as CEO of the Congress of Aboriginal and Torres Strait Islander Nurses and Midwives (CATSINaM) from 2020–22.

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